

Application No.: 10/792238

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REMARKS

Claims 1 to 31 are pending. No claims have been canceled. No claims have been withdrawn from consideration. No claims are amended. No claims have been added.

§ 103 Rejections

Claims 1 to 31 stand rejected under 35 USC § 103(a) as being unpatentable over U.S. 5,773,534 (Antonelli et al.) in view of U.S. 5,362,826 (Berge et al.), U.S. 4,394,493 (Bartkovitz et al.) and U.S. 5,653,699 (Reed et al.). The rejection is traversed.

The primary reference, Antonelli et al., describes a method of polymerizing unsaturated monomers using a macromonomer chain transfer agent to produce polymers having an end group of the formula $-\text{CH}_2-\text{C}(\text{X})=\text{CH}_2$, as described on column 3, line 43 to column 5, line 17., and as exemplified by a methacrylate macromonomer. Useful monomers that may be polymerized by the reference method include those listed from column 2, line 62 to column 3, line 2, and column 8, line 61 to column 9, line 10.

Claim 1 may be distinguished from Antonelli et al. in the limitation that the first component monomer comprises "pendent hydrophilic poly(alkylene oxide) groups", which may be derived from the monomers described from page 8, line 7 to page 9, line 10. Such monomers are neither taught nor suggested by the reference.

Claim 1 may further be distinguished from the reference by the limitation that the first component oligomer comprise "pendent free-radically polymerizable functional groups", which are described from the monomers described from page 9, line 19 to page 10, line 25. Such monomers are either taught or suggested. At reference column 3, lines 2-14, it is taught that "[a]t least a portion of the comonomers carry reactive functional groups which can serve as crosslinking sites". The subsequent definition of "reactive functional groups" are those that would react by a displacement or condensation reaction, such as carboxylic acid, amide, esters, epoxy, hydroxy, isocyanate, amino, anhydride, silyl, cyano, and the like. Applicants "pendent free-radically polymerizable functional groups" are unsaturated and effect crosslinking by a free-radical mechanism, which are neither taught or suggested.

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Claim 1 may further be distinguished from the reference by the limitation "poly(alkylene oxide) crosslinking agent having polymerizable, ethylenically unsaturated terminal groups", as exemplified by the formula on page 7, lines 12-16 and page 18, line 30 to page 20, line 4. Such crosslinking agents are neither taught nor suggested.

Claim 1 may further be distinguished from Antonelli et al. in the three instances of the word "hydrophilic", as Applicants have defined at page 4, lines 23-26. Antonelli et al. neither teaches nor suggests hydrophilic compositions, nor the selection of the requisite monomers that may be used to prepare a hydrophilic polymer.

Thus contrary to the procedures of M.P.E.P. 2142, the Office Action fails to identify the differences between the primary reference and the instant claims.

U.S. 5,362,826 (Berge et al.) describes a process for preparing macromonomers containing an olefinic polymerizable end group. These macromonomers appear to be the same used in the polymerization process of Antonelli et al. As argued with respect to Antonelli et al., Berge et al. suffers from the same defects; these references neither teaches nor describes "pendent hydrophilic poly(alkylene oxide) groups", "pendent free-radically polymerizable functional groups", the "poly(alkylene oxide) crosslinking agent having polymerizable, ethylenically unsaturated terminal groups", or "hydrophilic" polymers.

U.S. 4,394,493 (Bartkovitz et al.) describes crosslinkable graft copolymers of N-methylol acrylamide derivatives and poly(oxyalkylene) compounds. The N-methylol acrylamide derivatives are described on column 3, lines 22 to 41. The poly(oxyalkylene) compounds are described from column 2, line 54 to column 3, line 21. The resulting polymers are described as poly(oxyalkylene) chains having N-methylol acrylamide derivatives, grafted thereon, presumably through hydrogen abstraction on the poly(oxyalkylene), followed by radical addition to the acrylamide.

Claim 1 may be distinguished from Bartkovitz et al. by the limitation of "pendent free-radically polymerizable functional groups", which is neither taught nor suggested by the reference. The only source of unsaturated groups is the "N-methylol acrylamide derivatives", which are used to graft to the poly(oxyalkylene), and the grafting process does not yield pendent unsaturated groups.

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Claim 1 may further be distinguished from the reference by the limitation of "poly(alkylene oxide) crosslinking agent having polymerizable, ethylenically unsaturated terminal groups". As Applicants recite the plural, at least two of these unsaturated terminal groups are present to effect crosslinking.

At reference column 4, lines 49 to 55, it teaches the polymers are crosslinkable. The mechanism of crosslinking is not disclosed, but by analogy with other N-methylol systems, it may be presumed to involve displacement of the "OR" group of the grafted N-methylol monomer at column 3, lines 25-30 with a nucleophile, such as the terminal hydrogen, R', of the poly(oxyalkylene) shown on column 2, line 57. Thus the only apparent mechanism for crosslinking of the polymers of Bartkovitz et al. is a displacement reaction. The reference poly(oxyalkylene) compounds will not function as crosslinking agents by the same mechanism of Applicant's crosslinking agents, which contain at least two unsaturated groups.

In contrast, Applicant's composition crosslinks by a free radical reaction between the unsaturated groups of the crosslinking agent, and the pendent free-radically polymerizable functional groups of the first component oligomer. As a result of a different material selection, Applicant's compositions crosslink by a fundamentally different mechanism. The Examiner is requested to compare the instant crosslinking agents as described on page 7, lines 12-16 with the reference compounds at column 2, line 54 to column 3, line 21. Note at reference column 3, lines 16 to 19 that the reference poly(oxyalkylene) compounds terminate in a hydroxyl group or an alkyl group.

To summarize, claim 1 may be distinguished from Bartkovitz et al. in the limitations of "pendent free-radically polymerizable functional groups" and a hydrophilic poly(alkylene oxide) crosslinking agent having polymerizable, ethylenically unsaturated terminal groups. Bartkovitz et al. do not correct the deficiencies of either Antonelli et al. or Berge et al., alone or in combination.

U.S. 5,653,699 (Reed et al.), describes a "spiro-sorbent wound dressing having a differential moisture vapor transmission rate (MVTR). The reference exudate transport layer may comprise various hydrophilic material as described in columns 6, lines 48 to 55 and column 12, lines 25 to 35.

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Other than listing known hydrophilic materials such as gums, agar, starches, etc., in the Office action (at page 5), the relevance of Reed et al. is not apparent. The reference provides none of the limitations of claim 1, and does not correct the deficiencies of the previous references.

The Office Action does not offer a prima facie case from obviousness. M.P.E.P. requires the Examiner to examine the scope and content of the prior art, then ascertain the differences between the prior art and the claims at issue. The Examiner has failed to recognize the differences between the recited art and the claims, and then failed to provide references to correct the defects in the prior art, and then failed to provide the motivation to correct these same defects. Then the Office Action makes the conclusory statement that the recited art "as combined teach all the limitations of the instant claims".

The conclusion is incorrect. The recited art does not teach or suggest all the claim limitations, there is not motivation to modify or combine the reference teaching, and no reasonable expectation of success where on to modify the references.

The Office Action further asserts, incorrectly, that the 'instant claims differ from the references only in the specific parts by weight of the polymerized monomer units, oligomer component, and crosslinking agent. However, it would have been deemed prima facie obvious to select any of the crosslinkable polymers or copolymers such as poly(oxyethylene {list of monomers omitted}) to prepare crosslinkable hydrophilic materials that can be useful in medical articles and wound dressings.

Applicants object to this characterization. None of the references, alone or in combination, put one skilled in the art in possession of the specific monomers and parts thereof, oligomers and parts thereof, or crosslinking agent or parts thereof. Neither would the general teaching of Reed et al. directed to wound dressing and known hydrophilic materials, motivate one to modify Antonelli et al., Berge et al., or Bartkovitz et al. to prepare a hydrophilic wound dressing from the compositions of these references.

Of the references, Antonelli et al., Berge et al., and Bartkovitz et al., only Bartkovitz et al. is directed to a composition that is arguably hydrophilic, as the reference does incorporate poly(oxyalkylene) compounds. However, Bartkovitz teaches (at column 4, lines 40 to 48) that the reference compositions may be useful in the treatment of "a wide variety of substrates

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including textile fibers and fabrics", and "as lubricants for metals, textiles, fibers and carpets, and the like". There is no suggestion for the use of the Bartkovitz et al. polymers in a wound dressing construction. Berge et al. and Antonelli et al. are said to be useful in the production of coatings, finishes, inks, adhesives and sealants. See Berge et al. at column 2, lines 27 to 29 and column 7, lines 42 to 48. See Antonelli et al. at column 10, lines 1 to 5. Further, to modify either Berge et al. or Antonelli et al. to include a hydrophilic component will necessarily render these references unsatisfactory for their intended purposes: to provides coating, finishes, inks, adhesives, etc. As neither reference describes any hydrophilic monomers, and provides no suggestion for the combination with Reed et al., the suggested combination is without merit.

The rejection of claims 1 to 31 under 35 USC § 103(a) as being unpatentable over U.S. 5,773,534 (Antonelli et al.) in view of U.S. 5,362,826 (Berge et al.), U.S. 4,394,493 (Bartkovitz et al.) and U.S. 5,653,699 (Reed et al.) has been overcome and should be withdrawn. Claims 2 to 31 each add additional features to claim 1. Claim 1 is patentable for the reasons given above. Thus, claims 2 to 31 are likewise be patentable.

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested. Allowance of claims 1 to 31 at an early date is solicited.

Respectfully submitted,

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Date

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